

FILE 'BIOSIS' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 BIOSIS(R)

FILE 'CABA' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 CAB INTERNATIONAL (CABI)

FILE 'CAPLUS' ENTERED AT 14:00:06 ON 18 APR 2001
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'EMBASE' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 Elsevier Science B.V. All rights reserved.

FILE 'LIFESCI' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 Cambridge Scientific Abstracts (CSA)

FILE 'MEDLINE' ENTERED AT 14:00:06 ON 18 APR 2001

FILE 'SCISEARCH' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 Institute for Scientific Information (ISI) (R)

FILE 'JAPIO' ENTERED AT 14:00:06 ON 18 APR 2001
COPYRIGHT (C) 2001 Japanese Patent Office (JPO)

=> set plurals on perm
SET COMMAND COMPLETED

=> set abbr on perm
SET COMMAND COMPLETED

=> s microarray device
L1 5 MICROARRAY DEVICE

=> d scan
'SCAN' IS NOT VALID HERE
DISPLAY SCAN is not allowed with an L# containing results from
multiple files or from answer sets created by DUPLICATE, FOCUS,
FSEARCH, FSORT or SORT.

=> d l1 abs 1-5

L1 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2001 ACS
AB Equipment for the detection of specific DNA sequences, by using DNA
microarray technol. The detected sequences can be important for clin.
diagnosis of cancer genes, or bacterial or viral genes and for therapy
planning. The efficiency of the method is increased by combining it with
the polymerase chain reaction (PCR).

L1 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2001 ACS
AB The measurement of work function is a particularly effective method for
the characterization of surfaces because of the sensitivity of the
parameter to interfacial structure, modification and overall chem.
Accordingly, techniques for the anal. of work function offer a powerful
tool for monitoring surface chem. changes, esp. for situations involving
the immobilization of new moieties at the interface. In the present
paper, we describe the performance of a new, modified scanning Kelvin
microprobe which is capable of the tandem measurement of contact potential
and surface topog. with resolns. of 1 mV and 10 nm, resp. The lateral
resoln. is 1 .mu.m. The instrument has been applied to the study of
substrates modified by the attachment of biochem. macromols. such as
oligonucleotides and DNA. This preliminary work confirms the great

potential of the technique in the study of biocompatibility, macromol.
structure and ***microarray*** ***devices*** .

L1 ANSWER 3 OF 5 MEDLINE

AB The measurement of work function is a particularly effective method for the characterization of surfaces because of the sensitivity of the parameter to interfacial structure, modification and overall chemistry. Accordingly, techniques for the analysis of work function offer a powerful tool for monitoring surface chemical changes, especially for situations involving the immobilization of new moieties at the interface. In the present paper, we describe the performance of a new, modified scanning Kelvin microprobe which is capable of the tandem measurement of contact potential and surface topography with resolutions of 1 mV and 10 nm, respectively. The lateral resolution is 1 micron. The instrument has been applied to the study of substrates modified by the attachment of biochemical macromolecules such as oligonucleotides and DNA. This preliminary work confirms the great potential of the technique in the study of biocompatibility, macromolecular structure and ***microarray*** ***devices*** .

L1 ANSWER 4 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)

AB The measurement of work function is a particularly effective method for the characterization of surfaces because of the sensitivity of the parameter to interfacial structure, modification and overall chemistry. Accordingly, techniques for the analysis of work function offer a powerful tool for monitoring surface chemical changes, especially for situations involving the immobilization of new moieties at the interface. In the present paper, we describe the performance of a new, modified scanning Kelvin microprobe which is capable of the tandem measurement of contact potential and surface topography with resolutions of 1 mV and 10 nm, respectively. The lateral resolution is 1 mum. The instrument has been applied to the study of substrates modified by the attachment of biochemical macromolecules such as oligonucleotides and DNA. This preliminary work confirms the great potential of the technique in the study of biocompatibility, macromolecular structure and ***microarray*** ***devices*** .

L1 ANSWER 5 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)

AB Programmable force vector fields can be used to control a variety of flexible planar parts feeders such as massively parallel microactuator arrays or transversely vibrating (macroscopic) plates. These new automation designs promise great flexibility, speed and dexterity-we believe they may be employed to position, orient, singulate, sort, feed, and assemble parts. However since they have only recently been invented programming and controlling them for manipulation tasks is challenging. When apart is placed on our devices, the programmed vector field induces a force and moment upon it. Over time, the part may come to rest in a dynamic equilibrium state. By chaining sequences of force fields, the equilibrium states of a part in the field may be cascaded to obtain a desired final state. The resulting strategies require no sensing, and enjoy efficient planning algorithms

This paper begins by describing new experimental devices that can implement programmable force fields. In particular; we describe our progress in building the M-CHIP (Manipulation CHIP), a massively parallel array of programmable micromotion pixels. Both the M-CHIP and other ***microarray*** ***devices*** , as well as macroscopic devices such as transversely vibrating plates, may be programmed with vector fields, and their behavior predicted and controlled using our equilibrium analysis. We demonstrate lower bounds (i.e., impossibility results) on what the devices cannot do, and results on a classification of control strategies yielding design criteria by which well-behaved manipulation strategies may be developed. We provide sufficient conditions for programmable fields to induce well-behaved equilibria on every part placed

on our devices. define composition operators to build complex strategies from simple ones, and show the resulting fields are also well behaved We discuss whether fields outside this class can be useful and free of pathology.

Using these tools, we describe new manipulation algorithms. In particular we improve existing planning algorithms by a quadratic factor; and the plan length by a linear factor: Using our new and improved strategies, we show how to simultaneously orient and pose any part, without sensing, from an arbitrary initial configuration. We relax earlier dynamic and mechanical assumptions to obtain more robust and flexible strategies.

Finally, we consider parts feeders that can only implement a very limited 'vocabulary' of vector fields (as opposed to the pixel-wise programmability assumed above). We show how to plan and execute parts posing and orienting strategies for these devices, but with a significant increase in planning complexity and some sacrifice in completeness guarantees. We discuss the trade-off between mechanical complexity and planning complexity.

=> d l1 ibib 1-5

L1 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:28534 CAPLUS
DOCUMENT NUMBER: 134:81730
TITLE: PCR ***microarray*** ***device*** for clinical
diagnosis of cancer, bacterial and viral genes
PATENT ASSIGNEE(S): Arneth, Borros, Germany
SOURCE: Ger. Gebrauchsmusterschrift, 3 pp.
CODEN: GGXXFR
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 20003464	U1	20010111	DE 2000-20003464	20000226

L1 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:791918 CAPLUS
TITLE: Surface immobilized biochemical macromolecules studied
by scanning Kelvin microprobe
AUTHOR(S): Cheran, Larisa-Emilia; McGovern, Mark E.; Thompson,
Michael
CORPORATE SOURCE: Department of Chemistry, University of Toronto,
Toronto, ON, M5S 3H6, Can.
SOURCE: Faraday Discuss. (2000), 116(Bioelectrochemistry),
23-34
CODEN: FDISE6; ISSN: 0301-7249
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 22
REFERENCE(S): (1) Baikie, I; Mater Res Soc Symp Proc 1993, V309, P35
CAPLUS
(2) Baikie, I; Rev Sci Instrum 1991, V62(3), P725
CAPLUS
(4) Cheran, L; Analyst 1999, V124, P961 CAPLUS
(9) Kumar, C; Rev Sci Instrum 1996, V67(3), P805
CAPLUS
(10) Lundgren, S; Rev Sci Instrum 1995, V66(7), P3976
CAPLUS

L1 ANSWER 3 OF 5 MEDLINE
 ACCESSION NUMBER: 2001124795 MEDLINE
 DOCUMENT NUMBER: 21041235
 TITLE: Surface immobilized biochemical macromolecules studied by scanning Kelvin microprobe.
 AUTHOR: Cheran L E; McGovern M E; Thompson M
 CORPORATE SOURCE: Department of Chemistry, University of Toronto, 80 St. George Street, Toronto, Ontario, Canada M5S 3H6.
 SOURCE: FARADAY DISCUSSIONS, (2000) (116) 23-34; discussion 67-75. Journal code: BKT. ISSN: 1359-6640.
 PUB. COUNTRY: England: United Kingdom
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200102

L1 ANSWER 4 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
 ACCESSION NUMBER: 2000:864290 SCISEARCH
 THE GENUINE ARTICLE: 372RZ
 TITLE: Surface immobilized biochemical macromolecules studied by scanning Kelvin microprobe
 AUTHOR: Cheran L E (Reprint); McGovern M E; Thompson M
 CORPORATE SOURCE: UNIV TORONTO, DEPT CHEM, 80 ST GEORGE ST, TORONTO, ON M5S 3H6, CANADA (Reprint)
 COUNTRY OF AUTHOR: CANADA
 SOURCE: FARADAY DISCUSSIONS, (SEP 2000) No. 116, pp. 23-34. Publisher: ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD, CAMBRIDGE CB4 0WF, CAMBS, ENGLAND
 ISSN: 0301-7249.
 DOCUMENT TYPE: Article; Journal
 FILE SEGMENT: PHYS
 LANGUAGE: English
 REFERENCE COUNT: 21
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L1 ANSWER 5 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
 ACCESSION NUMBER: 1999:94773 SCISEARCH
 THE GENUINE ARTICLE: 159TX
 TITLE: Programmable force fields for distributed manipulation, with applications to MEMS actuator arrays and vibratory parts feeders
 AUTHOR: Bohringer K F (Reprint); Donald B R; MacDonald N C
 CORPORATE SOURCE: UNIV WASHINGTON, DEPT ELECT ENGN, 234 EE CSE BLDG, BOX 352500, SEATTLE, WA 98195 (Reprint); DARTMOUTH COLL, DEPT COMP SCI, SUDIHOFF LAB 6211, HANOVER, NH 03755; CORNELL UNIV, DEPT ELECT ENGN, ITHACA, NY 14853; CORNELL NANOFABRICAT FACIL, ITHACA, NY 14853
 COUNTRY OF AUTHOR: USA
 SOURCE: INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, (FEB 1999) Vol. 18, No. 2, pp. 168-200. Publisher: SAGE PUBLICATIONS INC, 2455 TELLER RD, THOUSAND OAKS, CA 91320. ISSN: 0278-3649.
 DOCUMENT TYPE: Article; Journal
 FILE SEGMENT: ENGI
 LANGUAGE: English
 REFERENCE COUNT: 75
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

```
=> e plurality multi    alyte? device?
E1          2          PLURALITY/BI
E2      276482          PLURALITY/BI
E3          0 --> PLURALITY MULTI ANALYTE? DEVICE?/BI
E4          1          PLURALITYF/BI
E5          14          PLURALITYOF/BI
E6          1          PLURALITYTY/BI
E7          14          PLURALIY/BI
E8          1          PLURALIYT/BI
E9          46          PLURALIZATION/BI
E10         16          PLURALIZE/BI
E11         30          PLURALIZED/BI
E12         1          PLURALIZES/BI
```

```
=> s e2 and device
L2      89610 PLURALITY/BI AND DEVICE
```

```
=> s l2 and sequence?
L3      1025 L2 AND SEQUENCE?
```

```
=> s l3 and l1
L4          0 L3 AND L1
```

```
=> s l3 and multi analyt???
```

```
=> s l3 and multi analyt?
L5          1 L3 AND MULTI ANALYT?
```

```
=> d l5 ibib 1
```

```
L5  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2001 ACS
ACCESSION NUMBER:      2001:31723  CAPLUS
DOCUMENT NUMBER:      134:83073
TITLE:                Capillary electrophoresis apparatus and detector array
INVENTOR(S):          Melman, Paul; Tabasky, Marvin
PATENT ASSIGNEE(S):   Corning, Incorporated, USA
SOURCE:               PCT Int. Appl., 38 pp.
                     CODEN: PIXXD2
DOCUMENT TYPE:        Patent
LANGUAGE:             English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:
```

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001002846	A1	20010111	WO 2000-US17919	20000629
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

```
PRIORITY APPLN. INFO.:      US 1999-345904  19990701
REFERENCE COUNT:            7
REFERENCE(S):               (2) Craighead, H; US 5867266 A 1999 CAPLUS
                           (3) Kambara Hideki; US 5516409 A 1996 CAPLUS
                           (4) Melman, P; US 5903348 A 1999 CAPLUS
```

(5) Otsuka Pharma Co Ltd EP.0793098 A 1997 CAPLUS
(6) Rossi, M; US 5736410 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
35.47	35.77

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-1.18	-1.18

CA SUBSCRIBER PRICE

FILE 'STNGUIDE' ENTERED AT 14:10:03 ON 18 APR 2001

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE

AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Apr 13, 2001 (20010413/UP).

=> log h

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	35.77

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	-1.18

CA SUBSCRIBER PRICE

SESSION WILL BE HELD FOR 60 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 14:10:29 ON 18 APR 2001

Connecting via Winsock to STN

Trying 3106016892...Open

Welcome to STN International! Enter x:x

LOGINID:sssptal645kxs

PASSWORD:

* * * * * RECONNECTED TO STN INTERNATIONAL * * * * *

SESSION RESUMED IN FILE 'STNGUIDE' AT 14:11:45 ON 18 APR 2001

FILE 'STNGUIDE' ENTERED AT 14:11:45 ON 18 APR 2001

COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE

AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	35.77

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	-1.18

CA SUBSCRIBER PRICE

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	115and multianalyt?	93	<u>L16</u>
USPT	114 and 112	23	<u>L15</u>
USPT	quantitat? and devic?	1663	<u>L14</u>
USPT	s 112 1nd 19	1359514	<u>L13</u>
USPT	(dna sequence?)[AB] AND (device?)[AB]	361	<u>L12</u>
USPT	(dna?)[AB] AND (device?)[AB]	1	<u>L11</u>
USPT	(multianalyt?)[AB] AND (device?)[AB]	0	<u>L10</u>
USPT	(sequence?)[AB] AND (device?)[AB]	324	<u>L9</u>
USPT	(microarray)[AB] AND (device?)[AB]	0	<u>L8</u>
USPT	(microarray)[AB] AND (sequenc?)[AB]	1	<u>L7</u>
USPT	('us17919' 'wo2001002846')[PN]	0	<u>L6</u>
USPT	17919	17	<u>L5</u>
USPT	us17919	0	<u>L4</u>
DWPI	Melman et al	493048	<u>L3</u>
DWPI	2001002846	0	<u>L2</u>
DWPI	wo 2001002846	587542	<u>L1</u>

WEST[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)**Search Results -**

Terms	Documents
115and multianalyt?	93

Database:

US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Refine Search:

115and multianalyt?

[Clear](#)**Search History****Today's Date: 4/18/2001**